

# HEART SOUND RECORDER



## HSR SOFTWARE QUICK START

# HSR DESCRIPTION AND INTENDED USE

## **1. HEART SOUND RECORDER DESCRIPTION & INTENDED USE**

The Heart Sound Recorder (HSR) is a computer based Low Risk, General Wellness Heart Stress Monitor to acquire, display, record and save heart sounds.

Certain types of heart stress can be monitored by visualizing the Rate, Rhythm and Tone of the heart cycle. The heart's reaction to certain types of stress, such as chemical, nutritional or emotional stress, can be nearly immediate, and its response to a given mitigation technique is often within 5-10 minutes. These changes can be observed by changes of the frequency, ratio, amplitude and characteristics of the heart waveform.

### Intended Use:

1. A Heart Stress Monitor that records and displays the low frequency component of the heart cycle as a waveform on a PC.
2. For the purpose of visualizing the rate, rhythm and tone of the heart cycle.
3. Can be used to compare current and previous heart cycle waveforms for before and after analysis, or for trending purposes.

### Indications for Use:

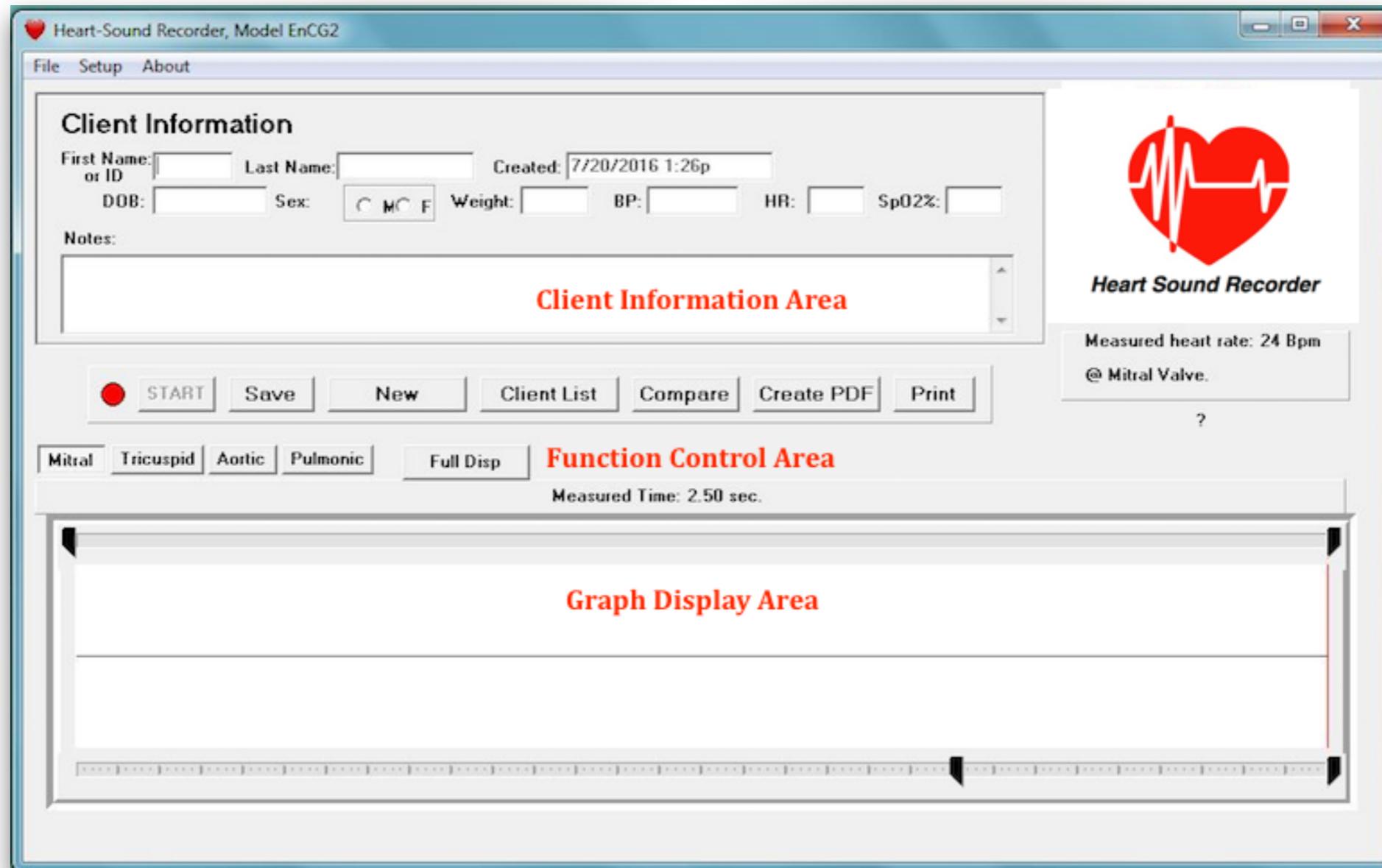
1. Used to enhance and support a healthy lifestyle through stress management.
2. Used to reduce the risk or impact of certain chronic diseases or conditions where it is well understood and accepted that healthy lifestyle choices may play an important role in health outcomes for the disease or condition.
3. Observe the effect of chemical or nutritional stress on the heart, such as MSG, caffeine, or refined sugar.
4. Can be used to provide visual information on the effects of chemical or nutritional induced stress on the heart.

### Claims:

1. May be used to promote or enhance heart function.
2. May be used to promote or improve dietary choices.
3. May be used to promote, improve or manage levels of stress.
4. May be used to promote physical and emotional wellbeing.

## HSR SOFTWARE QUICK START

# THE CONTROL PANEL



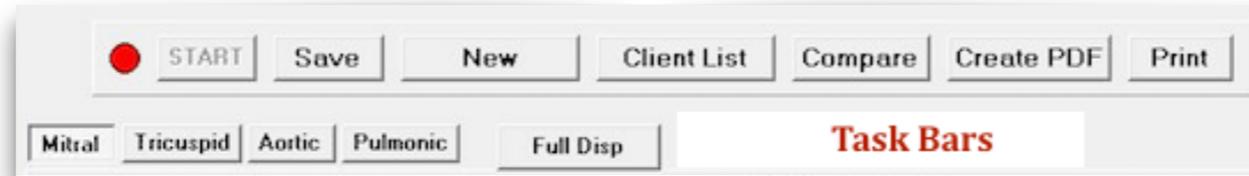
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# ENTERING A NEW CLIENT

## ENTERING "NEW CLIENT" INFORMATION

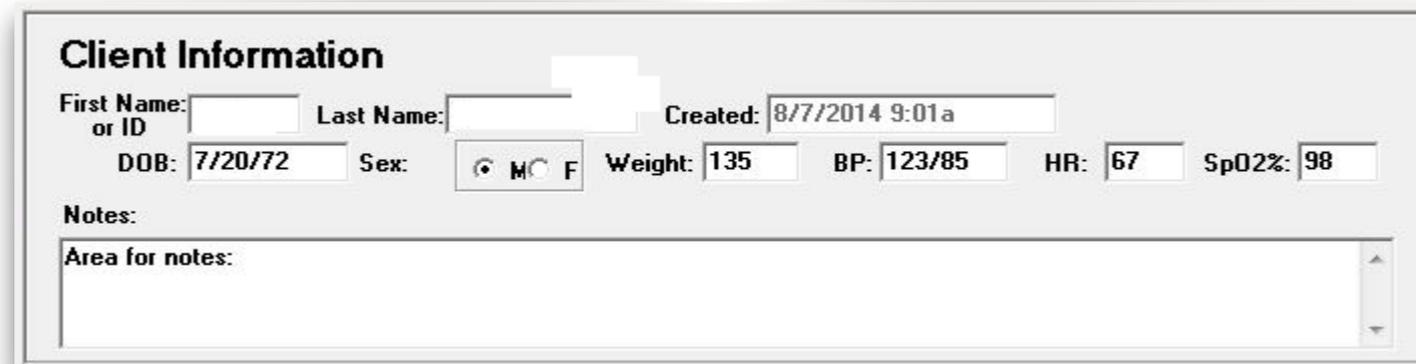
### A. [New] button on Task Bar creates a new record in the database

1. Be mindful of correct spelling of names
2. Do not enter the same person as a New client more than once



### B. Client Information

1. First Name, Last Name, [Date/Time-stamp]
  - a) ID - use for confidentiality i.e. client number + Date/Time-stamp
2. Client Information: DOB, Sex, Weight, BP, HR, SpO2%



### C. Same Name Protocol: BUG WARNING

1. The software is unable to accommodate two clients with identical first and last names.
2. If you encounter two identical names,
  - a) Add a title or number to the Last Name field: Smith Jr. or Jones 1 or Doe2, etc.
  - b) WARNING: Saving a duplicate First and Last name will result in Data Loss for the first client. See Troubleshooting.
  - c) Always use Returning Client [New Session] for a second session. Entering the same client as New will result in Data Loss. See Troubleshooting.

### D. Session Notes:

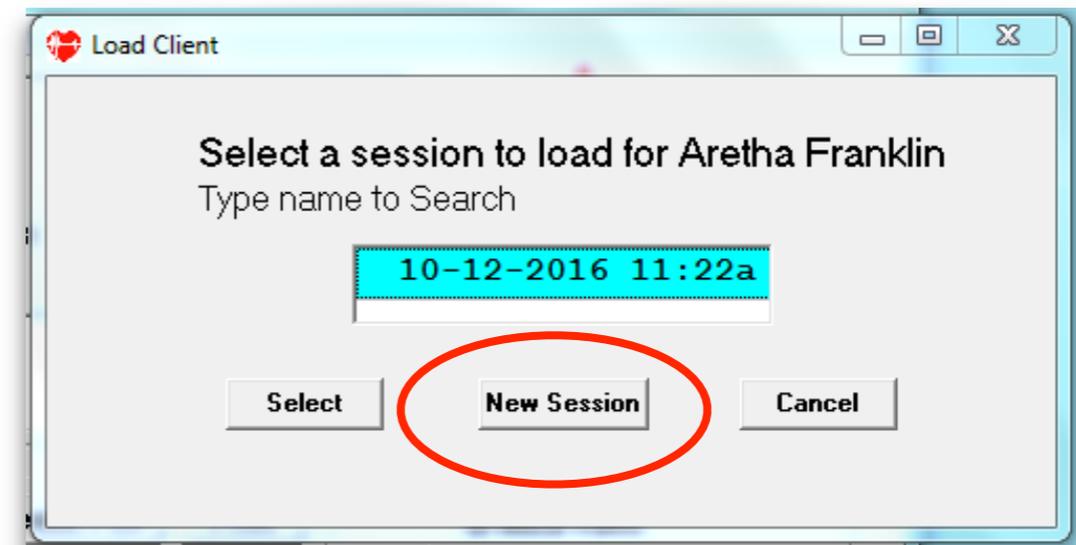
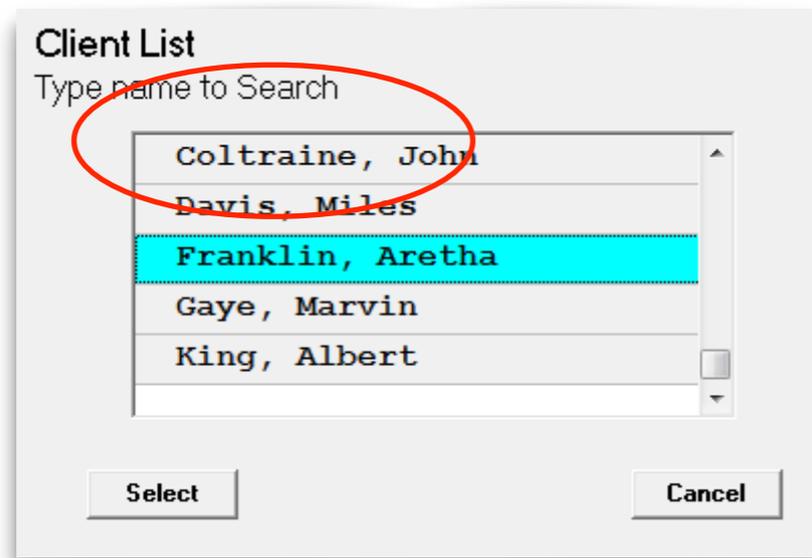
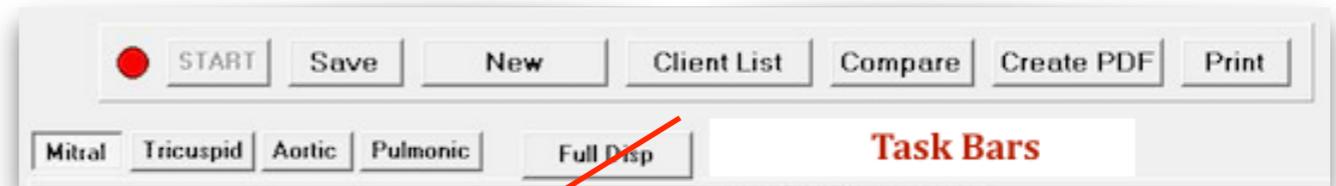
1. Example: supplements recommended; caffeine or recent meal prior to session; prescription drugs taken, etc. Difficulty acquiring a recording

# ENTERING A RETURNING CLIENT

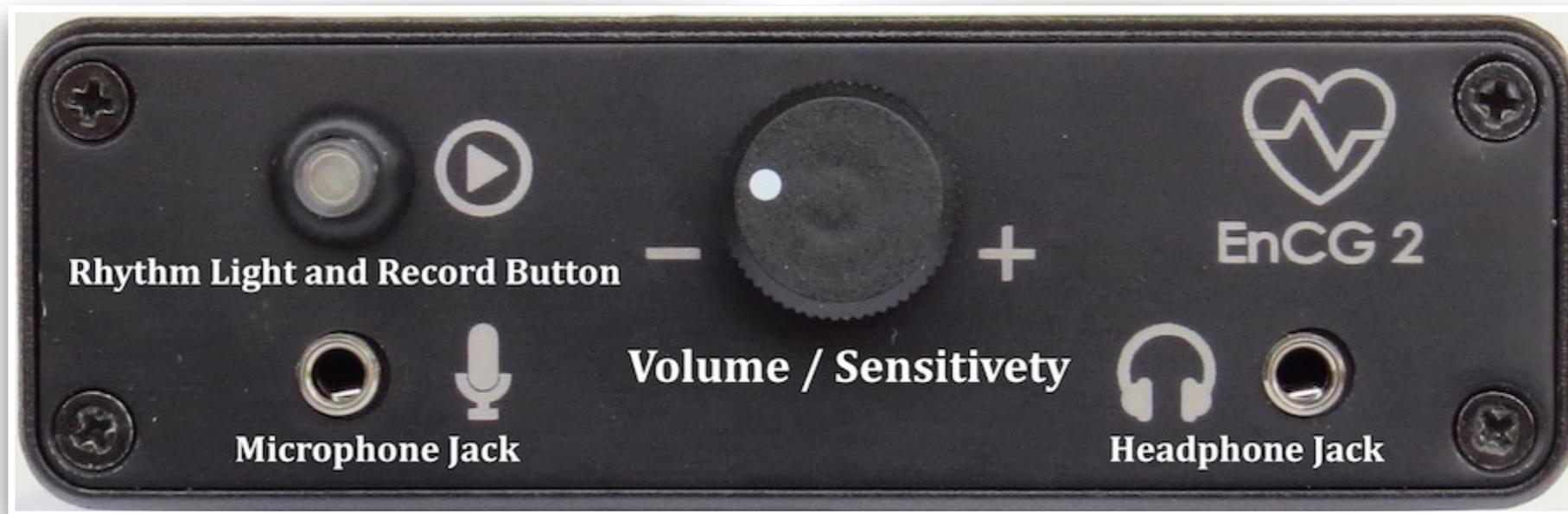
ENTERING a "RETURNING CLIENT" SESSION (all the Client records are here)

## A. Select [Client List] button on Task Bar

1. Type LAST name to search
2. Select the Client's name > select [New Session]
3. To review a previous session > [Select]
4. Be mindful not to enter a person under misspelled or transposed names



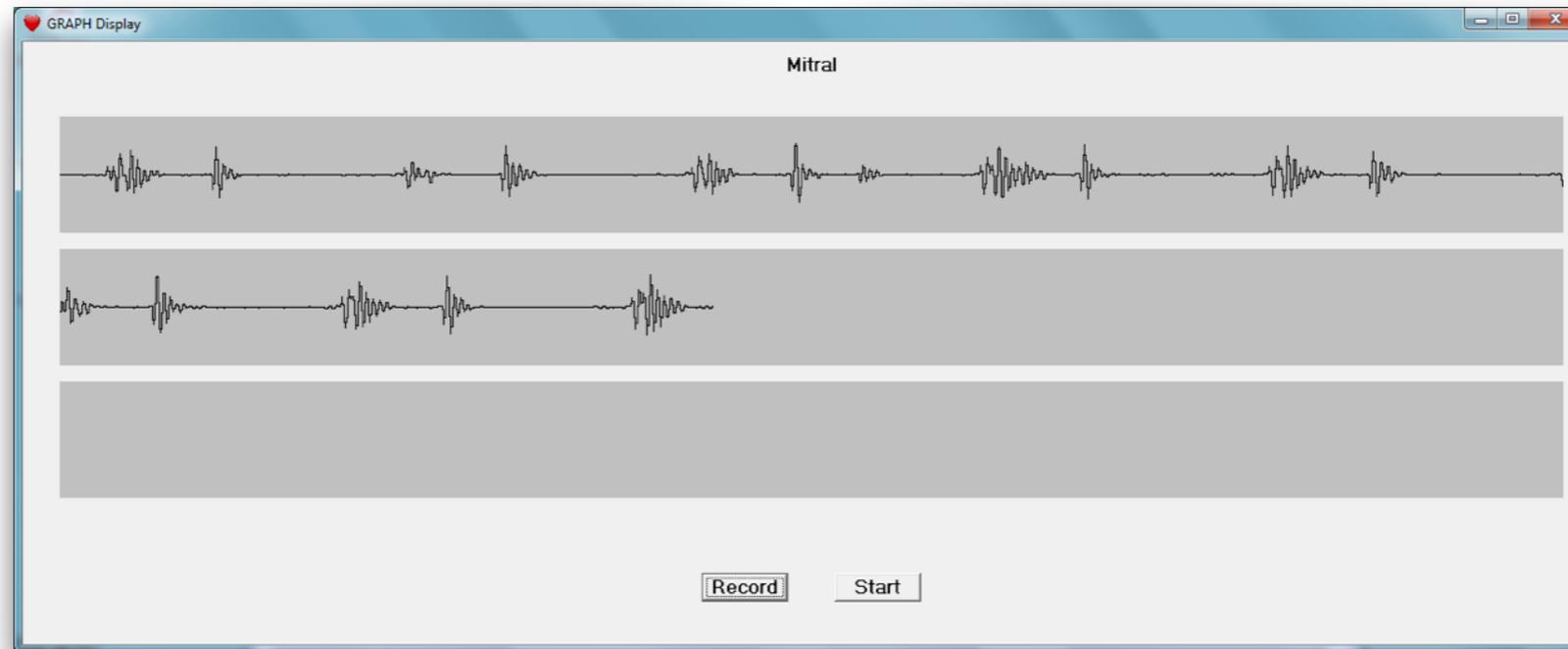
# CONTROL UNIT FRONT PANEL



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# RECORDING A HEART GRAPH

- A. **Apply the Microphone** according to the techniques taught in the Training Sessions
- B. **Select** the button from the **Valve** Task Bar to indicate the valve being recorded
  1. Select **[Start]** to begin the recording function.
- C. **Graph Display Window** opens to display the client's heart cycle.
  1. **TUNE: Adjust the Volume / Sensitivity knob** on the **Control Unit** according to the training received in the Training Sessions



2. **[Record]** button begins a 15 second recording
  - a) At the end of the 15 sec. recording, the software returns to the Control Panel with the recorded valve's Graph Display containing the graph just completed
3. Start/Stop
  - a) A function to start or stop the live graph.
  - b) To close the window, first **[Stop]** the live graph, then close
- D. Recording options for recording a graph
  1. Select the **[RECORD]** button on bottom of display with a mouse or PC touchpad
  2. **Press the Rhythm Light Switch on Control Unit**
    - a) When you Tune by adjusting the Volume/Sensitivity knob, you can instantly record by pressing the flashing light switch with your thumb
    - b) The flashing Rhythm Light is a visual indicator of when you are nearly in tune i.e. if you do not observe the repeating beat of S1 & S2 (lub dub . . . . lub dub), you need to adjust – either with microphone placement, or with volume/sensitivity

# THE GRAPH DISPLAY WINDOW

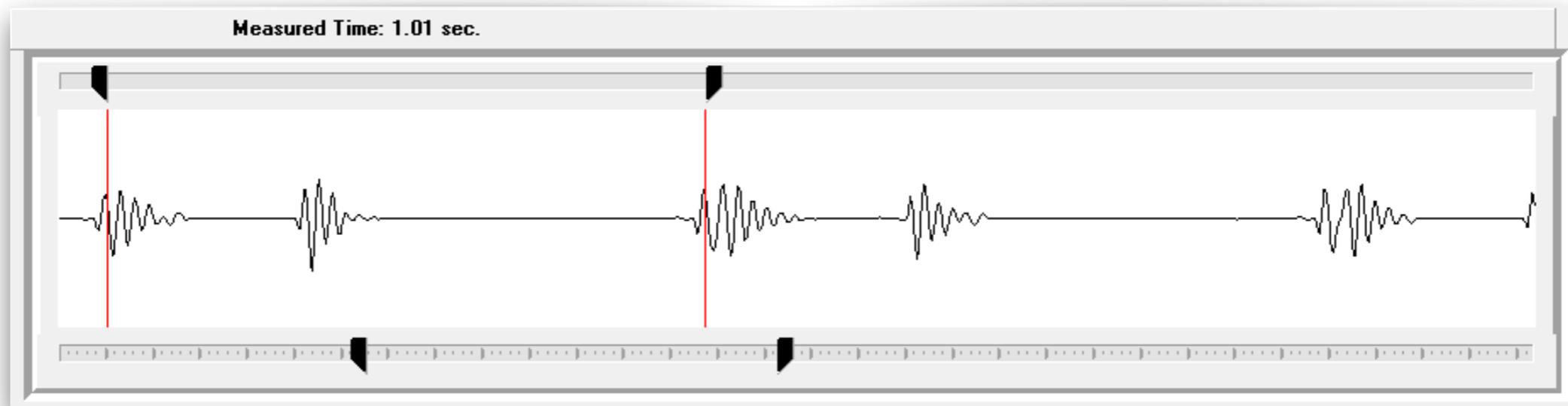
## ONCE THE RECORDING IS ACQUIRED

### A. Manipulate calipers in Display Window

1. **Lower Caliper:** Scroll through 15 sec of recording to select heart cycles you wish to display for each valve
2. **Upper Caliper: Only with Mitral valve selected**, measure the heart rate of the heart cycle from common points on two adjacent S1 beats
  - a) Displays under Heart logo: Measured heart rate: 67 Bpm @ Mitral Valve.
3. **Upper Caliper: All valves** – measures event width as duration (time) of S1 or S2, rest periods, work/rest ratios, etc. Can be used for comparison.
  - a) Measured Time displays as 0.00 seconds above Display Window

### B. [Save] function

1. The software has warnings if you accidentally omit a valve or close before saving,
2. A session can be reopened to add notes, reposition the calipers, etc. The Save Warning window will question your motives.



# THE DISPLAY CALIPERS

The screenshot shows the 'Heart-Sound Recorder, Model EnCG2' application window. The interface includes a menu bar (File, Setup, About), a 'Client Information' section with fields for name, DOB, sex, weight, BP, HR, and SpO2, and a 'Notes' area. A toolbar contains buttons for START, Save, New, Client List, Compare, Create PDF, and Print. Below the toolbar are tabs for 'Mitral', 'Tricuspid', 'Aortic', 'Pulmonic', and 'Full Disp'. The 'Mitral' tab is selected and circled in red. A red oval highlights the 'Measured heart rate: 67 Bpm @ Mitral Valve.' text on the right. A red box highlights the 'Measured Time: 0.90 sec.' text above the waveform. A red box highlights the 'Active Scroll Bar Area' at the bottom of the waveform. A red box highlights the 'Calipers are operated to measure Time, Heart Rate, on all valves.' text with arrows pointing to the waveform. A red box highlights the 'The Measured Heart Rate displays here only from the Mitral Valve window.' text on the right. The waveform itself shows a heart rate measurement of 67 Bpm and a measured time of 0.90 sec.

Heart-Sound Recorder, Model EnCG2

File Setup About

**Client Information**

First Name: Tom Last Name: Last Created: 8/7/2014 9:01a

DOB: 7/20/72 Sex:  M  F Weight: 135 BP: 123/85 HR: 67 SpO2%: 98

Notes:

Area for notes:

START Save New Client List Compare Create PDF Print

Mitral Tricuspid Aortic Pulmonic Full Disp

Measured Time: 0.90 sec.

Calipers are operated to measure Time, Heart Rate, on all valves.

Active Scroll Bar Area

Heart Sound Recorder

Measured heart rate: 67 Bpm @ Mitral Valve.

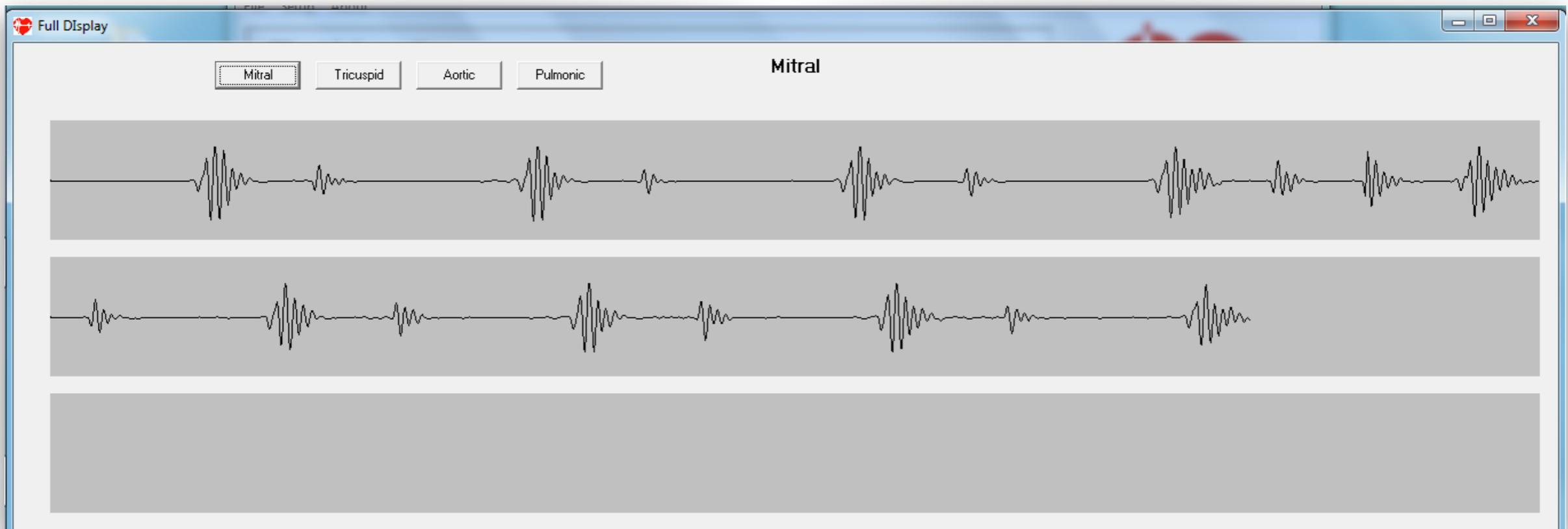
The Measured Heart Rate displays here only from the Mitral Valve window.

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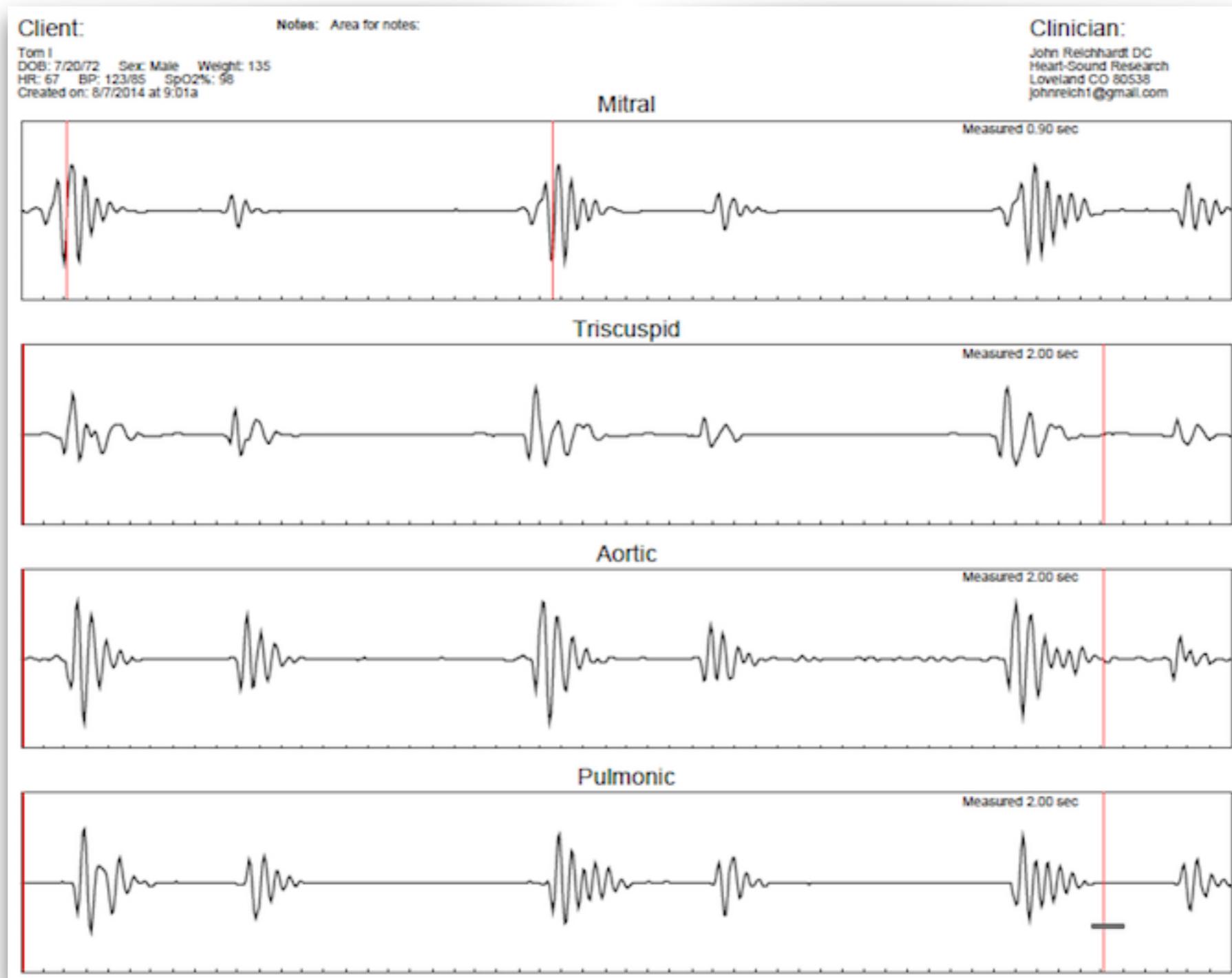
# VIEW COMPLETE RECORDING

## VIEW THE COMPLETE RECORDING

1. The Full Display **[Full Disp]** button in the Task Bar opens a new window that contains the full recording of the four valves.
2. Click the **[Valve]** buttons at the top to toggle through the four valve recordingsR
3. The user is unable to save, print or create a pdf from this screen.
4. To save this graph, use Windows Snipit tool and save it as a jpeg file.



# PRINT PREVIEW WINDOW

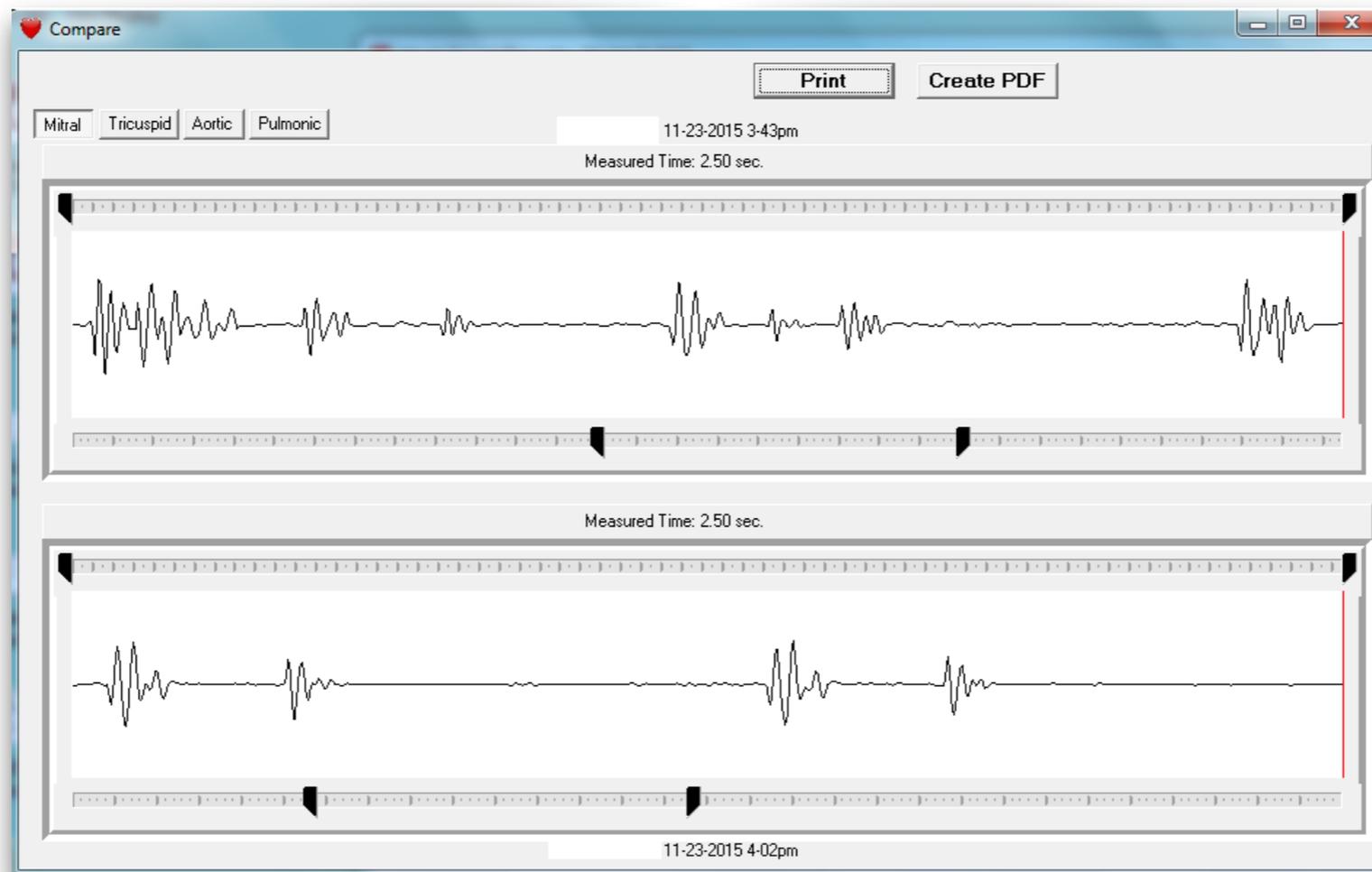


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# COMPARE SESSIONS

## COMPARE SESSIONS

- A. Select **[Compare]** button to compare two different sessions for the same client.
  1. Select **Client** > **Select two sessions to compare**
  2. Compare window > select valve to compare
  3. Manipulate upper and lower calipers of each session
  4. Print or Create PDF



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